

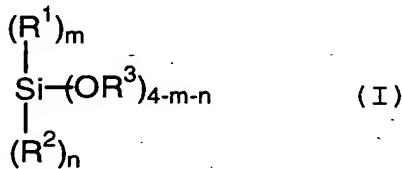
Claims:

1. A composition comprising (a) a thermally decomposable polymer and (b) a siloxane oligomer dissolved in (c) an 5 organic solvent.

2. The composition according to Claim 1, wherein (b) the siloxane oligomer is a compound having a non-hydrolyzable organic group.

10

3. The composition according to Claim 2, wherein (b) the siloxane oligomer is a hydrolytic condensation product of an alkoxy silane represented by the following formula (I):



15

wherein R^1 and R^2 each represent a non-hydrolyzable group which may be the same or different; R^3 represents an alkyl group having 1 to 6 carbon atoms; and each of m and n is an integer selected from 0 to 3 so 20 that m and n satisfy the relationship: $0 \leq m + n \leq 3$.

20

4. The composition according to Claim 3, wherein (a) the thermally decomposable polymer is a polymer which exhibits a weight loss at 250°C of less than 5% based on the weight 25 at 150°C as measured by a thermogravimetric analysis in which the temperature is elevated from 30°C or lower at a temperature elevation rate of 20°C/min under an air stream.

25

5. The composition according to claim 4, wherein (a) the thermally decomposable polymer is a polymer which exhibits a weight loss at 400°C of 80% or more based on the weight 30 at 150°C as measured by a thermogravimetric analysis in which the temperature is elevated from 30°C or lower at a

temperature elevation rate of 20°C/min under an air stream.

6. The composition according to Claim 5, wherein (a) the thermally decomposable polymer is a fluorine-free polymer.

5

7. The composition according to claim 5, wherein (a) the thermally decomposable polymer is a methacrylate polymer or an acrylate polymer.

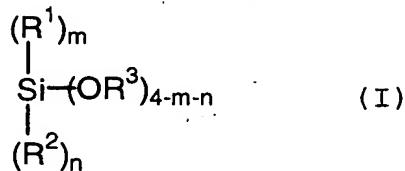
10 8. A composition comprising

- (a) a thermally decomposable polymer,
- (b) a siloxane oligomer, and
- (c) an organic solvent in which both of said components (a) and (b) are soluble.

15

9. The composition according to Claim 8, wherein (b) the siloxane oligomer is a compound having a non-hydrolyzable organic group.

20 10. The composition according to Claim 9, wherein (b) the siloxane oligomer is a hydrolytic condensation product of an alkoxy silane represented by the following formula (I):



25 wherein R^1 and R^2 each represent a non-hydrolyzable group which may be the same or different; R^3 represents an alkyl group having 1 to 6 carbon atoms; and each of m and n is an integer selected from 0 to 3 so that m and n satisfy the relationship: $0 \leq m + n \leq 3$.

30

11. The composition according to Claim 10, wherein (a) the thermally decomposable polymer is a polymer which exhibits a weight loss at 250°C of less than 5% based on the weight

at 150°C, as measured by a thermogravimetric analysis in which the temperature is elevated from 30°C or lower at a temperature elevation rate of 20°C/min under an air stream.

5 12. The composition according to Claim 11, wherein (a) the thermally decomposable polymer is a polymer which exhibits a weight loss at 400°C of 80% or more based on the weight at 150°C, as measured by a thermogravimetric analysis in which the temperature is elevated from 30°C or lower at a
10 temperature elevation rate of 20°C/min under an air stream.

13. The composition according to Claim 12, wherein (a) the thermally decomposable polymer is a fluorine-free polymer.

15 14. The composition according to Claim 12, wherein (a) the thermally decomposable polymer is a methacrylate polymer or an acrylate polymer.

20 15. A method for forming a low-permittivity film which comprises applying the composition according to any one of Claims 1 to 14 to a substrate to form a composite film comprising the thermally decomposable polymer and the siloxane oligomer evenly compatibilized therewith, and then heating the resulting film to condense the siloxane
25 oligomer and remove the thermally decomposable polymer.

16. A method for forming a low-permittivity film which comprises applying the composition according to any one of Claims 1 to 14 to a substrate to form a composite film
30 comprising the thermally decomposable polymer and the siloxane oligomer evenly compatibilized therewith, subsequently conducting a first heating step in which the siloxane oligomer is crosslinked while keeping the thermally decomposable polymer remaining in the film, and then
35 conducting a second heating step in which the thermally decomposable polymer is removed.

17. The method according to Claim 16, wherein said first heating step is conducted at a temperature of 80 to 350°C, and wherein said second heating step is conducted at a temperature of 350 to 500°C.

5

18. A low-permittivity film formed by the method according to Claim 15.

19. A low-permittivity film formed by the method according
10 to Claim 16.

20. A low-permittivity film formed by the method according to Claim 17.

15 21. An electronic part having the low-permittivity film according to Claim 18.

22. An electronic part having the low-permittivity film according to Claim 19.

20

23. An electronic part having the low-permittivity film according to Claim 20.